



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,376	02/21/2002	John J. Gregel	ERICP0328USA	9648

7590 07/29/2003

Jonathan A. Platt
Renner, Otto, Boisselle & Sklar, LLP
Nineteenth Floor
1621 Euclid Avenue
Cleveland, OH 44115-2191

[REDACTED] EXAMINER

FITZGERALD, JOHN P

[REDACTED] ART UNIT

[REDACTED] PAPER NUMBER

3637

DATE MAILED: 07/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/081,376	GREGEL ET AL.	
	Examiner	Art Unit	
	John P Fitzgerald	3637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on _____.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-25 is/are pending in the application.
 4a) Of the above claim(s) 14-19,23 and 24 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-14 and 20-22 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) 14-19,23 and 24 are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 21 February 2002 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.
 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4 and 5</u> .	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species of the claimed invention: Figures 1-6 & 8-11; Figures 7 & 8-11; Figures 13 & 8-11.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, 1 is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Art Unit: 3637

2. During a telephone conversation with Mr. John Renner on 09 July 2003 a provisional election was made **with** traverse to prosecute the invention of Figures 1-6 & 8-11, claims 1-13 and 20-22. Affirmation of this election must be made by applicant in replying to this Office action. Claims 14-19 and 23-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Specification Objections

3. The abstract of the disclosure is objected to because of the legal term “comprising.” Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 and 11 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Namely, as recited, it is unclear if the “flexible inner edge” is a further limitation of the “spring finger washers,” or of the “sleeve.”

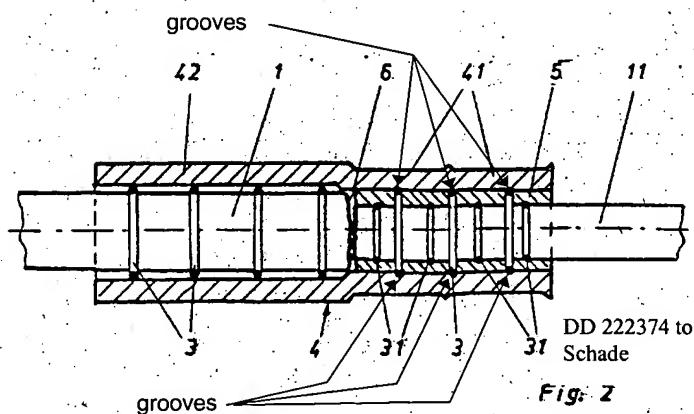
6. Claim 11 recites the limitation “the wedge surface” in lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

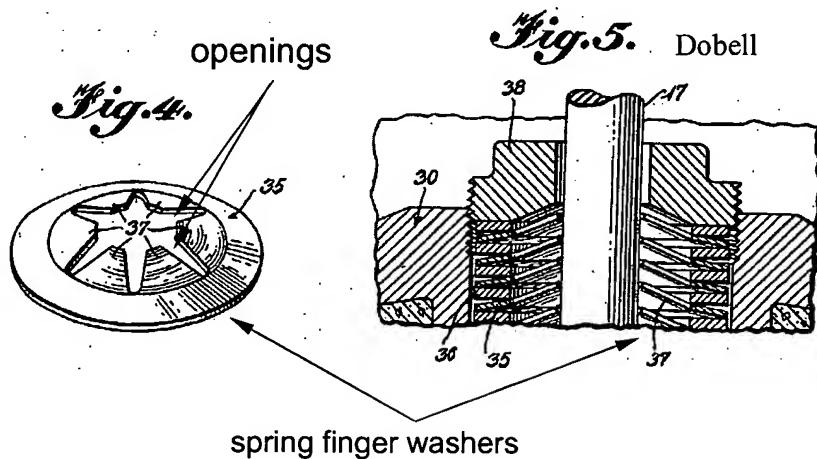
7. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-3 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over DD 222374 to Schade et al. and Dobell. DD 222374 to Schade et al. discloses a reinforcing bar connection (Figs. 1 and 2) for joining two reinforcing bars (1, 11) end-to-end for use in reinforced concrete construction, comprising a sleeve (42); two sets of three to ten flexible metal ring washers (3) mounted and oppositely arranged in the sleeve which are "adapted to" expand around the reinforcing bar ends projecting into each end of the sleeve and to grip the bar ends to prevent withdrawal and wherein the sets of flexible metal ring washers include between three and ten. DD 222374 to Schade et al. does not expressly disclose a reinforcing bar connection wherein the washers further include spring fingers having a generally channel-shape cross-section formations.

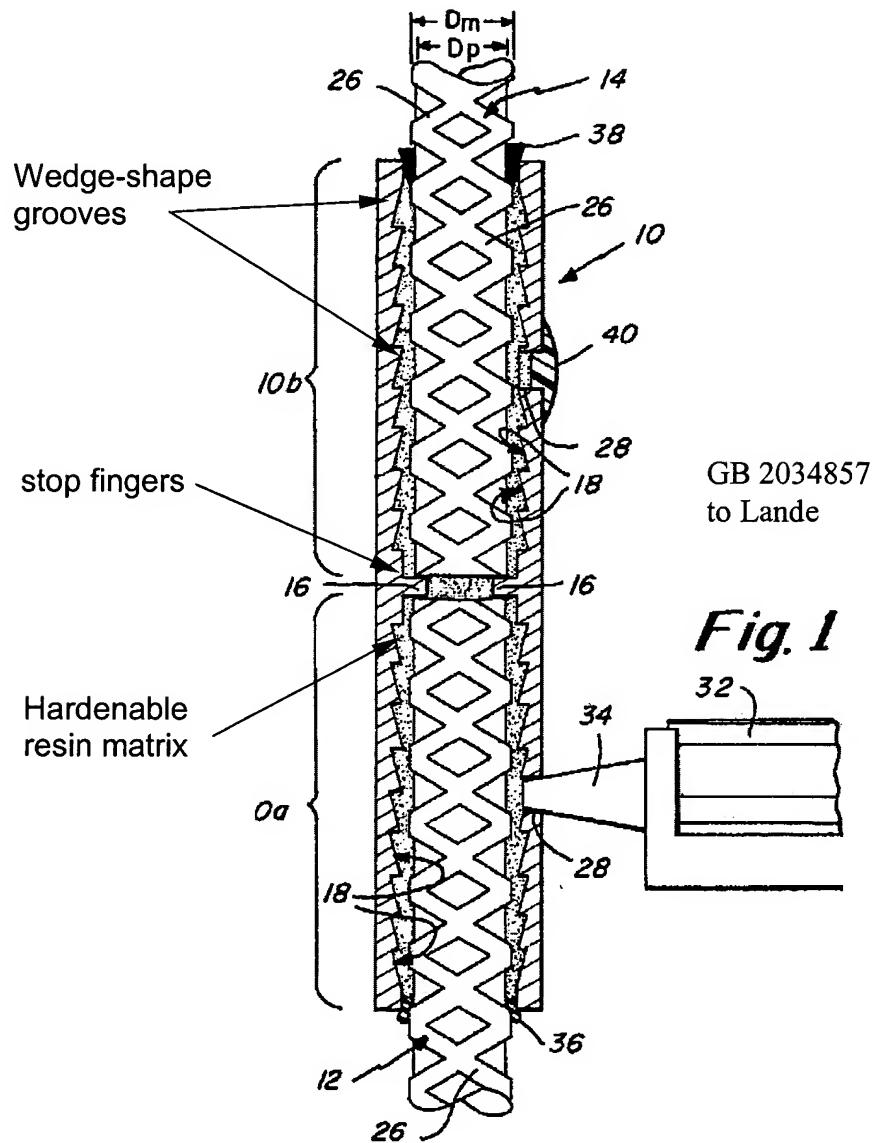


Dobell teaches a reinforced bar end connector for use in a reinforced concrete construction (Figs. 1-5) having a sleeve (30) within which a plurality of spring finger washers (37) having a generally channel-shape cross-section are mounted having a flexible inner edge "adapted to" expand around the reinforcing bar (17) end to bite into and grip the bar end to prevent withdrawal after the bar end has been inserted into the sleeve in the final assembled configuration (Dobell: col. 6, lines 45-75). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the spring finger washers taught by Dobell, modifying the reinforcing bar connection disclosed by DD 222374 to Schade et al., thus allowing gripping the reinforced bar while maintaining sufficient resiliency so as to distribute the load between the plurality of washers (DD 222374 to Schade et al.: col. 4, lines 53-59). Further regarding claim 13, DD 222374 to Schade et al. further discloses four washers mounted in relation to bar end (1) and three washers mounted in relation to bar end (11). Dobell teaches approximately twenty spring fingered washers related to bar end (17). It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ any number of spring fingered washers mounted within the sleeve and thus preventing withdrawal of the reinforcing bar ends based on design choice and engineering design concerns.



9. Claims 4, 5 and 9-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over DD 222374 to Schade et al. and Dobell as applied to claims 1-3 above, and further in view of GB 2034857 to Lande. DD 222374 to Schade et al. and Dobell disclose a reinforcing bar connection having all of the elements stated previously. DD 222374 to Schade et al. further discloses a reinforcing bar connection wherein the outside of each of the flexible metal spring washers are mounted in grooves (see Fig. 2 above). Dobell further teaches openings in the spring finger washers (see Fig. 4 above). DD 222374 to Schade et al. and Dobell do not expressly disclose a reinforcing bar connection including a hardenable matrix filling the sleeve after the bar is inserted; wherein the hardenable matrix is a resin; including at least one wedge-shaped groove in the interior of the sleeve at an end thereof forming a shoulder facing the end; including a plurality of wedge-shape grooves and shoulders at each end of the sleeve; wherein the wedge surface of the wedge-shape groove tapers to a smaller diameter toward the end of the sleeve and the shoulder is formed at the larger diameter. GB 2034857 to Lande teaches a reinforcing bar connection (Figs. 1-16) including a plurality of wedge-shaped grooves and shoulders (18, 20, 22) at each end of the sleeve; wherein the wedge surface of the wedge-shape grooves tapers to a smaller diameter toward the end of the sleeve and the shoulder is formed at the larger diameter; wherein a hardenable matrix of resin filling the sleeve after the bar is inserted (GB 2034857 to Lande: page 2, lines 88-92). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ at least one or a plurality of wedge-shaped grooves in the interior of the sleeve and a hardenable matrix of resin filling the sleeve, as taught by GB 2034857 to Lande, thus having resin pass through the openings of the spring finger washers as well as cooperating with the wedge-shaped grooves and shoulders in a manner which

significantly increases the tensile strength of the joint (GB 2034857 to Lande: page 3, lines 1-10).



10. Claims 6-8, 11, 12 and 20-22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over DD 222374 to Schade et al., Dobell and GB 2034857 to Lande, as applied to claims 1 and 4 above, and further in view of GB 2192210 to Kadota. DD 222374 to Schade et al., Dobell and GB 2034857 to Lande disclose a reinforcing bar connection having all of the elements stated

previously. GB 2034857 to Lande further discloses stop fingers (16) mounted in the sleeve to limit the extent of insertion of the bar ends inserted into the sleeve. DD 222374 to Schade et al., Dobell and GB 2034857 to Lande do not expressly disclose a reinforcing bar connection wherein the hardenable matrix is a grout; including a stop-washer inserted in the sleeve to limit the extent of insertion of the bar ends inserted into the sleeve; wherein the stop-washer includes a central hole having a diameter less than that of the bar ends. GB 2192210 to Kadota teaches a reinforcing bar connection (Figs. 1-4) wherein a hardenable matrix of grout (34) (GB 2192210 to Kadota: page 2, line 127) is applied within a sleeve (10) acting in conjunction with a washer (15) having a central hole (Fig. 3) with a diameter less than that of the bar ends. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a hardenable matrix of grout, and to modify the stop-fingers to a stop-washer, as taught by GB 2192210 to Kadota; modifying the reinforcing bar connection disclosed by DD 222374 to Schade et al., Dobell and GB 2034857 to Lande, thus providing a very secure and rigid bond an interaction between the grout, the reinforcing bars and the sleeve (GB 2192210 to Kadota: page 2, lines 117-128). Furthermore, it would have been an obvious matter of design choice to employ any type or shape of stopper means to limit the extent of the bar ends inserted into the sleeve, since applicant has not disclosed that a circular shape with a central hole solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with any type of stopper means provided the hardenable matrix is allowed to flow in and around the junction point of the two bar ends within the sleeve. Additionally, forming the various elements of the reinforcing bar end connection with integral or separable components is considered well within the ordinary skill of one in the art. Lastly, regarding the method claims

Art Unit: 3637

of 20-22, GB 2034857 to Lande teaches the step of providing a plurality of wedge shaped grooves and shoulders in each end of the sleeve and the introduction of a hardenable matrix within the sleeve; Dobell teaches the insertion of spring fingered washers inserted in an end of a sleeve; DD 222374 to Schade et al. teach the insertion of a plurality of flexible ring washers oppositely arranged in the sleeve to grip the bar ends and prevent withdrawal. It would have been obvious to one of ordinary skill in the art to employ the method steps recited in claims 20-22, utilizing the teachings of DD 222374 to Schade et al., Dobell and GB 2034857 to Lande to form a reinforced bar end connection with all of the recited elements.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Durpre teaches a connector having spring finger washers inserted in a sleeve for gripping a wire; Yee teaches a reinforced bar connector utilizing a hardenable matrix introduced in a sleeve; Abukawa teaches a reinforced bar connector having sleeve with finger stopper and a hardenable grout matrix; EP 1225284 to Gregel et al. teaches a reinforced bar connector having a star-shape stopper within the sleeve; and GB 2247889 to Gough et al. teaches a connector having spring fingers gripping ends of wires inserted into a sleeve.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Fitzgerald whose telephone number is (703) 305-4851. The examiner can normally be reached on Monday-Friday from 7:00 AM to 3:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lanna Mai, can be reached on (703) 308-2486. The fax phone numbers for the organization where this

Art Unit: 3637

application or proceeding is assigned are (703)-872-9302 before final action, and (703) 872-9327 after final action. Any inquiry of a general nature relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-1113.



JF

07/10/2003

LANNA MAI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

